



Memorandum

*To: Stephanie Vaughn (USEPA)
Elizabeth Buckrucker (USACE)*

*From: Scott Kirchner (CDM Smith)
George Molnar (CDM Smith)*

Date: October 16, 2013

*Re: Status Report (October 23 to November 27, 2012)
CPG Oversight of Background Sediment Sampling
Lower Passaic River Restoration Project*

On behalf of the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE), Kansas City District, CDM Federal Programs Corporation (CDM Smith) provided oversight of the Cooperating Parties Group (CPG) remedial investigation/feasibility study (RI/FS) field activities associated with a background sediment investigation located above Dundee Dam.

CDM Smith oversight activities included the observation of background sediment sample location reconnaissance activities, and sample collection and processing. All activities were conducted in accordance with the *Lower Passaic River Restoration Project, Background and Reference Conditions Addendum to the Quality Assurance Project Plan, Surface Sediment Chemical Analyses and Benthic Invertebrate Toxicity and Bioaccumulation Testing*.

Photographs of field activities are located in Attachment 1. Copies of sediment split sample chains-of-custody (COCs) can be found in Attachment 2. Copies of logbook notes are provided in Attachment 3.

General Summary

Oversight consisted of observations of sediment sample location reconnaissance and on-river sample collection and processing activities conducted by CPG subcontractors, Windward Environmental (Windward) and Ocean Surveys, Inc. (OSI).

During the site reconnaissance, CPG field crews navigated to proposed sample locations using a mast-mounted or hand-held global positioning system (GPS) unit programmed with the correct coordinates. Each day's locations along with the field crew's physical location were indicated on CPG's navigation software.

Proposed locations were examined in order to determine if they met the requirements specified in CPG's QAPP Addendum regarding substrate composition and proximity to outfalls such as combine sewer overflows or storm water drains. Field crews also took into account other factors such as water depths and presence of boulders that would hinder sampling vessel accessibility. Using a GPS, crews logged the coordinates of all locations that were moved from the initially proposed locations so they could return to sample in the upcoming weeks.

During sediment sampling, all samples were collected via boom-mounted pneumatic power grab. Prior to sampling at each location, the grab sampler was scrubbed using Alconox followed by a river water rinse. In addition, basic water quality measurements were taken and consisted of pH, temperature, conductivity, and turbidity. At each location, a sufficient number of grabs were collected to fulfill analytical requirements. For those samples collected from sediment quality triad (SQT) locations, additional grabs were made for benthic community analysis and sediment toxicity tests. Grabs containing sediment at depths less than the required 15 centimeters (cm), or grabs which over penetrated were discarded. A total of 24 samples were submitted for SQT parameters; 16 were submitted for chemistry only.

Within each acceptable grab, sediment for chemical analysis was removed from a 9 X9 inch area and transferred to a stainless steel bowl, homogenized, and placed into the appropriate sample jars. All retained samples were processed on the vessel throughout the day, placed on ice, and stored in a walk-in refrigerator at the CPG facility until ready for shipment. For those samples being submitted for benthic community analysis, samples were placed in sieves comprised of the appropriate mesh size (0.5 millimeters [mm]), and rinsed until all material able to pass through was rinsed away. Remaining material was then transferred to containers, and fixed in 10 percent neutral buffered formalin.

Summary of Daily Activities

The following is a summary of daily activities observed during the course of the background sediment sampling field effort:

October 23, 2012. CDM Smith oversight staff observed the first of two days of sediment sample location reconnaissance activities. Prior to the arrival of oversight staff, CPG field crews already performed some reconnaissance activities within reach 10. Oversight crews were unaware that the CPG planned an earlier start. Oversight staff observed all reconnaissance activities within Reach 9. At each of the proposed SQT locations in both reaches, crews collected sediment to determine substrate composition. Crews also collected samples for grain size determination at each of the proposed chemistry only locations and “screened” for grain size when needed.

Approximately 13 of the proposed locations that were initially scoped out needed to be relocated. Four of these locations were situated south of a water supply line that intersects the river at the surface immediately above Dundee Dam. Due to the location of the pipe, boats were unable to access locations to the south. These locations were relocated just north of the supply line. The remaining 9 locations that needed to be moved were situated within backchannels of islands and bars and were either inaccessible by boat mostly due to water depths and obstructions. These locations were relocated as close as possible to the abandoned locations.

October 24, 2012. CDM Smith oversight staff observed the second day of background sediment sample location reconnaissance above Dundee Dam. The CPG crew returned to locations within reach 10 that were selected the previous morning prior to the arrival of oversight staff. After further examination, some of locations were moved downstream from original locations to areas of finer substrate and less rocks.

November 12, 2012. CDM Smith oversight staff observed the first day of background sediment sampling. Four SQT locations, UPRT18H, 18I, 18J, and 18K were sampled. No issues were encountered.

November 13, 2012. Six SQT locations, UPRT19J, 19K, 19L, 19M, 20A, and 20B were sampled. No issues were encountered.

CDM Smith collected split samples from locations UPRT19J, 19M, and 20A.

November 14, 2012. Six SQT locations, UPRT20C, 20D, 20E, 20F, 20G, and 21A were sampled. Location UPRT21A was moved approximately 13 feet east of the proposed location due to debris. During the course of the day, the winch battery on the boat needed to be replaced which caused a 45 minute delay.

November 15, 2012. Six SQT locations, UPRT21B, 21C, 21D, 21E, 21F, and 21G were sampled. No issues were encountered.

November 16, 2012. The last of the SQT locations, UPRT22A and 22B were sampled. Location UPRT22B was moved approximately 180 feet north as the substrate at the initial location was comprised of cobbles and boulders. No other issues were encountered.

Crews demobed from the site for the Thanksgiving holiday in the upcoming week.

November 26, 2012. Crews returned back to the site. Twelve chemistry only locations, UPRT18A to 18G and UPRT19A to 19E were sampled. Location UPRT19D was moved approximately 23 feet northwest of the initial location due to debris. Location UPRT18A was moved approximately 20 feet northwest of the initial location due to its shallow depth. No other issues were encountered.

CDM Smith collected split samples from location UPRT18C.

November 27, 2012. Four chemistry only locations, UPRT19F through 19I were sampled. No issues were encountered and crews completed background sediment sampling activities.

Attachment 1
Site Photographs



Photo 1. Power grab ready for deployment



Photo 2. Power grab being deployed.



Photo 3. Contents of a power grab.



Photo 4. Crews processing samples for benthic community analysis.



Photo 5. One of the vessels used in the background sediment sampling effort.



Photo 6. Benthos processing area with sieve and hose.

Attachment 2
Chain of Custodies

[illegible]

Site # Passaic Background Sediments
Contact Name: George Molnar
Contact Phone: 732-590-4633

Lab: AXYS
Lab Address: 2045 Mills Road West
Lab Phone: 888-373-0881

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

[illegible]

Site # Passaic Background Sediments
Contact Name: George Molnar
Contact Phone: 732-590-4633

Lab: Microbac
Lab Address: 250 West 84th Drive
Lab Phone: 219-906-8378

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

Site # Passaic Background Sediments
Contact Name: George Molnar
Contact Phone: 732-590-4633

Lab: Shealy Environmental
Lab Address: 106 Vantage Point Drive
Lab Phone: 803-791-9700

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

Contact Phone: 732-590-4633

Lab Phone: 888-373-0881

[illegible]

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

Contact Phone: 732-590-4633

Lab Phone: 732-321-6707

[illegible]

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time

[illegible]

[illegible]

Attachment 3
Logbook Notes

4 Location _____ Date _____
Project / Client _____

Location Upper Passaic River Date 10/24/12⁵
Project / Client USACE
Sediment Recon

07:36 → SO arrives on site. SO = Sean O'Hare of COM OSI members Dustin Knack and Carl Entrell are on river ready to start work.

07:45 → Karen Tabirasan (KT) and Beit Bergquist of Windward arrive on site and load vessel with supplies.

Weather → Over-cast w/ showers ~ 60°F

PPE → Level D Modified

07:50 → OSI holds health & safety meeting. Topics of concern include: wearing proper PPE and pinch points.

08:00 → Depart boat ramp and navigate up-river to RM 20.4 just north of the Rt. 4 bridge along the western bank. This location may be used as an alternate location for UPRT22C since

~~8-02~~ 10/24/12

6 Location Upper Passaic River Date 10/24/12
Project / Client USACE
Sediment Recon

Vessel could not navigate to location due to limited water depth. The total depth for alternate location is 2.6' and substrate consists of finer silt. A field grain size test is conducted. Results show 50% coarse sediment and 50% fine sediment. A high amount of organic material was present in sample.

* Note: UPRT21F was moved south of original location due to a high amount of rocky substrate. UPRT21G was moved south of ~~UPRT21F~~ and across to the eastern bank from its original location due to rocky substrate.

08:24 → Navigate to UPRT21B just south of Rt. 4 Bridge along western bank. Depth to water is 2.3'. Sample is collected via clamshell

SO 2 10/24/12

7 Location Upper Passaic River Date 10/24/12
Project / Client USACE
Sediment Recon

"WILDCO". Grain size results: 45% coarse and 55% fine sediment.

08:40 → Navigate to UPRT21C. Depth to water is 7.4'. Clamshell collects sample. Substrate consists of a soft silt with rocks and clam shells.

A field grain size test was conducted. Results consist of: 48% coarse sediment and 52% fine sediment.

08:50 → Arrive at benthic recon Z location to determine if it would be a suitable alternate sample station. Depth to water is 7.4' and is at ~ RM 19.8. The first two attempts were rocky. So location was attempted across

SO 2 10/24/12

8 Location Upper Passaic River Date 10/24/12
Project / Client USACE
Sediment Recon

river on western bank.

Grain size results consist of: 90% coarse sediment and 10% fine sediment.

Note: A young Fox is observed along shoreline.

09:13 → Navigate to location UPRT200F at URM 19.6.

Clamshell collects 2 sediment sample. Grain size results: 80% coarse and 20% fine.

09:23 → Arrive at location UPRT200E. Total depth is ~ 2.4'. Clamshell sample is collected and grain size results consist of: 80% coarse sediment and 20% fine sediment.

* UPRT200D is currently on boat ramp. Wilmington suggests investigating sediment slightly upriver and downriver of boat ramp since

SO 10/24/12

9 Location Upper Passaic River Date 10/24/12
Project / Client USACE
Sediment Recon

boat ramp contains a high amount of gravel.

* Note: All sediment grabs contain the top 6 inches of sediment.

09:35 → Navigate downstream of boat ramp to UPRT2001. Substrate consists of mucky fines. Depth is 5.4' and grain size results are: 36% coarse and 64% fine.

09:45 → Navigate upriver of boat ramp to UPRT2002. Substrate consists of: 92% coarse and 8% fine gravelly sediment.

09:53 → Navigate to middle of channel directly in front of boat ramp and take a grab sample. Total depth is 4 to 7' and substrate consists of sandy gravel.

SO 10/24/12

Location Upper Passaic River Date 10/24/12
 Project / Client USACE
Sediment Reach

10:00 → Navigate down river to UPRT200. Total depth is 5.9'. Clamshell sample is taken. Substrate consists of: soft/silty muck. Grain size results are: 34% coarse and 66% fine sediment. This location is ~200' up-river from a combined sewage outfall (CSO).

10:25 → Arrive at location UPRT200B. Windward notes that proposed location is close to a few "CSO's" and may need to be moved. Location is moved slightly down river. Total depth is ~5.6' and sample is taken. Substrate consists of: soft silt w/ clay. Grain size results: 18% coarse silt and 82% fine sediment.

10:37 → Navigate to UPRT200A on eastern bank. Total depth is 11.3' and

80% 10/24/12

Location Upper Passaic River Date 10/24/12
 Project / Client USACE
Sediment Reach

Sample is collected. Substrate consists of silt w/ clay. Grain size is: 14% coarse sediment and 86% fine sediment.

10:51 → Arrive at a potential alternate location "Benthic Reach 9" on eastern bank at RM 19.1. Total depth is 8.8'. Sample is taken. Grain size is 92% coarse sediment and 8% fine sediment.

11:00 → Break for lunch and Windward calls office to discuss observations.

11:45 → Return to boat and navigate up river to determine if there is an alternate location for UPRT22C.

12:23 → Head up to RM 20.7 and take sample near western

80% 10/24/12

Location Upper Passaic River Date 10/24/12
 Project / Client USACE
Sediment Recon

bank. Total depth is 4.5'
 and substrate is very rocky.
 No sample can be taken.
 12:34 → Another benthic
 recon is conducted near
 RM 20.4 in middle of
 channel. Sample is taken.
 Substrate consists mostly
 of sand. Total Depth is
 4.5'.

12:45 → Benthic recon is
 conducted at RM 20.3 in
 middle of channel. Sand
 substrate is observed again.
 Windward will perhaps stay
 in middle of channel in
 certain stretches of Reach
 10 where rocks are observed.

13:15 → Arrive back at
 boat ramp. OSI demobs. Wind
 goes back to CPG facility
 and will start sediment program
 on Monday, 10/29/12.

13:35 → SO departs back to office
 SS 10/24/12

Location Upper Passaic River Date 11/12/12
 Project / Client USACE
Sediment Sampling

PPE! Modified Level ID
 weather! Overcast, 50°F
 personnel: JR (Com Smith),
 Windward, OSI
 objective: collection of chemical
 and toxicity samples in
 the UPR.

0830 JR arrives on site -
 Dustin Kach and Ryan (OSI)
 Ballenbach are setting up
 equipment.

0920 Health and Safety
 briefing held

0955 Arrive at 18 I - UPR T18 I

*1013 UPR T18 I Sample time first grab

1032 Second grab of 18 I

1045 third grab

1056 fourth grab

1105 Several more grabs attempted
 with no yield

1115 target will be moved
 no more than 2. Since soil
 is not being retained

1145 WD-40 was sprayed
 20 11-12-12

Location Upper Passaic River Date 11-12-12
 Project / Client USACE Sediment background
J. Rakowski

on pistons. The bucket
 is now operating properly.

1205 Collect water quality

information from 18H

*1215 Collect first grab from
 UPR T18H

1255 Sixth grab from UPR T18H

1310 arrive at UPR T18J

*1342 Two grabs collected
 so far on this location

1415 Completed UPR T18J

*1425 Arrive at UPR T18K

1515 Complete grab of 18K.

Winchard - currently processing
 samples.

1615 arrive at elmwood
 park after processing

1655 help load vehicles and
 depart site.

2.02 11-12-12

Location Upper Passaic Date 11-13-12
 Project / Client USACE Sediment
J. Rakowski

AE: Modified level D

Weather: Rain, 50°F

Personnel: OSI, Windward,

J.R. (Carm Smith)

Objective: Continue collection

of background sediment

0730 JR arrives onsite

0740 Launch from elmwood

Park

0815 Arrive at UPR-T19J

*0830 A split sample will be
 accept from UPR-T19J

* A Sheen and Coal tar smell
 is coming from 19J

0930 A fourth grab is collected.

*0945 Arrive at UPR-T19K
 to start grabs.

1045 Arrive at 19L and start
 to grab samples

1140 Arrive at 19M on L

Start to grab samples

*1159 UPR-T19M split sample

1320 Arrive at UPR-T20A

Clams found in grab

d.r. 11-13-12

Location Upper Passaic River Date 11-13-12
 Project / Client USACE - background sediment
J. Rakowski

* 1330 UPR-T20A split Sample time.

* 1430 Arrive at UPR-20B

1440 Start to grab samples

1500 UPR-T20B Complete

1545 Arrive at Elmwood ramp

1615 depart site to head to

comsmith warehouse

Notes - generic label codes

20A-C = sample 1

19M-C = 2

19J-C = 3

J. R.
11-13-12

Location Upper Passaic River Date 11-14-12
 Project / Client USACE - background sediment
J. Rakowski

PE Modified Level D
 Weather: 40° Fahrenheit

Personnel: JR (comsmith)

Windward: OSI

Objective: Continue collection of toxicity and chemistry samples

0725 JR arrives on site

0800 setup at UPR-T20C

* 0815 First grab collected from UPR-T20C. A petroleum-like odor is coming from grab bucket.

0910 Setup at location UPR-T20D

* 0915 First grab collected at UPR-T20D

0920 winch motor fails.

1000 Backup winch is being installed.

1015 Continue collecting grab samples

1040 Complete UPR-T20D

1100 Arrive at UPR-T20E

* 1112 collect 1st grab at UPR-T20E

End 11-14-12

Location Upper Passaic River Date 11-14-12Project / Client USACE - background sedimentJ. Robinson

1134 Third grab collected at UPR-T20E.

1140 UPR-T20E complete - 4 grabs

1145 Setup on UPR-T20F

*1150 First grab at UPR-T20F

1235 Fourth grab collected at UPR-T20F

Note - pictures of sheen on water taken at 20F

1245 Setup on UPR-T20G

*1252 First grab of UPR-T20G

1320 UPR-T20G completed.

1330 Arrive at UPR-T21A

*1350 Collect 1st grab of UPR-T21A. (This location was moved 13' East due to debris at river surface.)

1423 UPR-T21A fourth grab collected

1445 Arrive at Elmwood Park boat ramp

1500 JR helps unload boats and departs site

J. R 11-14-12Location Upper Passaic River Date 11-15-12Project / Client USACE - background sedimentJ. Robinson

PPE: Modified Level D

Personnel: JR (CDR Smith)

Weather: 40°F

Objective: Continuation of Sediment Sampling

0730 JR arrives onsite

0805 launch off elmwood park boat ramp

*0820 First grab collected from UPR-T20B

0900 Fifth grab collected from UPR-T20B. A slight petroleum odor was present in grab 5. f-m-c silt found in buckets.

0945 Arrive at UPR-T20B

*0920 1st grab at UPR-T20B

*1005 1st grab at UPR-T21D ¹¹⁻¹⁵⁻¹²

*1052 1st grab at UPR-T21E

Grab contains FMC sand

*1129 1st grab at UPR-T21E ¹¹⁻¹⁵⁻¹²

Collected

*1225 UPR-T21G - first grab

1300 UPR-T21G complete

J. R 11-15-12

Location

Upper Passaic River Date 11-15-12

Project / Client

USACE - background sediment

1330 Start to transfer
Supplies off boat
1350 depart Site

JR

11-15-12

Location

Upper Passaic River Date 11-16-12²¹

Project / Client

USACE - background Sediment

PPE Modified Level D

Weather: 35°F

Personnel: JR (can-smith), OSI,
WindwardObjective: Continue collection
of sediment samples

0700 JR arrives on site

0725 Windward transfers equipment
onto boat

0745 depart boat ramp

0800 Arrive at UPR-T22A

*0805 1st grab collected at 22A

0845 22A Completed

0855 Arrive at UPR-T22B

This location has cobble and boulders
0900 move 170 North of proposed
location

*0910 1st grab of 22B collected

0945 completed grabs of
22B.1010 Arrive at Elmwood boat
ramp and start to transfer
supplies1030 depart Site
JR 11-16-12

Location Upper Passaic River Date 11-26-12
 Project / Client USACE Background Sediment

J. Palow

PRE Modified Level D

Weather: 35°F

Personnel: JR (COM Smith)

Windward OST

Objective: Continue collection of background sediment

0800 JR arrives on site

0835 OST arrives on site

0845 Start to load boat

0905 Launch from boat ramp

0915 GR 11-26-12

0935 Arrive at UPR-T18A

0950 UPR-T18A Scoop retrieved

* Sample collected 20
 NW of proposed location due
 to shallow water

1020 Arrive at UPR-T18B

*1029 UPR-T18B Sample time

1040 Arrive at UPR-T18C

*1048 UPR-T18C * CX accepted
 as a split sample

*1119 UPR-T18D Sample time

*1135 UPR-T18E grab

*1200 UPR-T18F grab

GR 11-26-12

Location UPR Date 11-26-12
 Project / Client USACE background Sediment

J. Palow

*1217 UPR-T18G Sample time

1235 Arrive at UPR-T19A

*1238 UPR-T19A Sample time

*1313 UPR-T19B Sample time

*1333 UPR-T19C Sample time

*1355 UPR-T19D Sample time

Location was moved 23' NW
 of original location due to
 debris

1403 New Sample time

*1417 UPR-T19E Sample time

1500 depart elmwood park

J. Palow
11-26-12

24

Location

UPR

Date _____

11-27-12

Project / Client

USACE background sediment

J. K. Kowalski

PPE: Modified Level D

weather: 40° Fahrenheit, light rain

Personnel: JR (COM-Smith), OSI,
Windward

Objective: Continuation of Sediment Sampling.

0645 JR arrives onsite and
awaits Woodward's arrival

0715 load boat

0730 lunch from elmwood

07400 park

*0745 Arrive at UPR-T19F

WPR-T19F Sample time

0750 Arrive at UPR-T19G

*0759	UPR-TAG Sample time
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* 0815 UPR-TIGH sample time

* 0233 JPR-T19I Sample + 1B

0900 Arrive at boat ramp

0915 depart SVA

11-27-12

25

Location

Date _____

Project / Client